

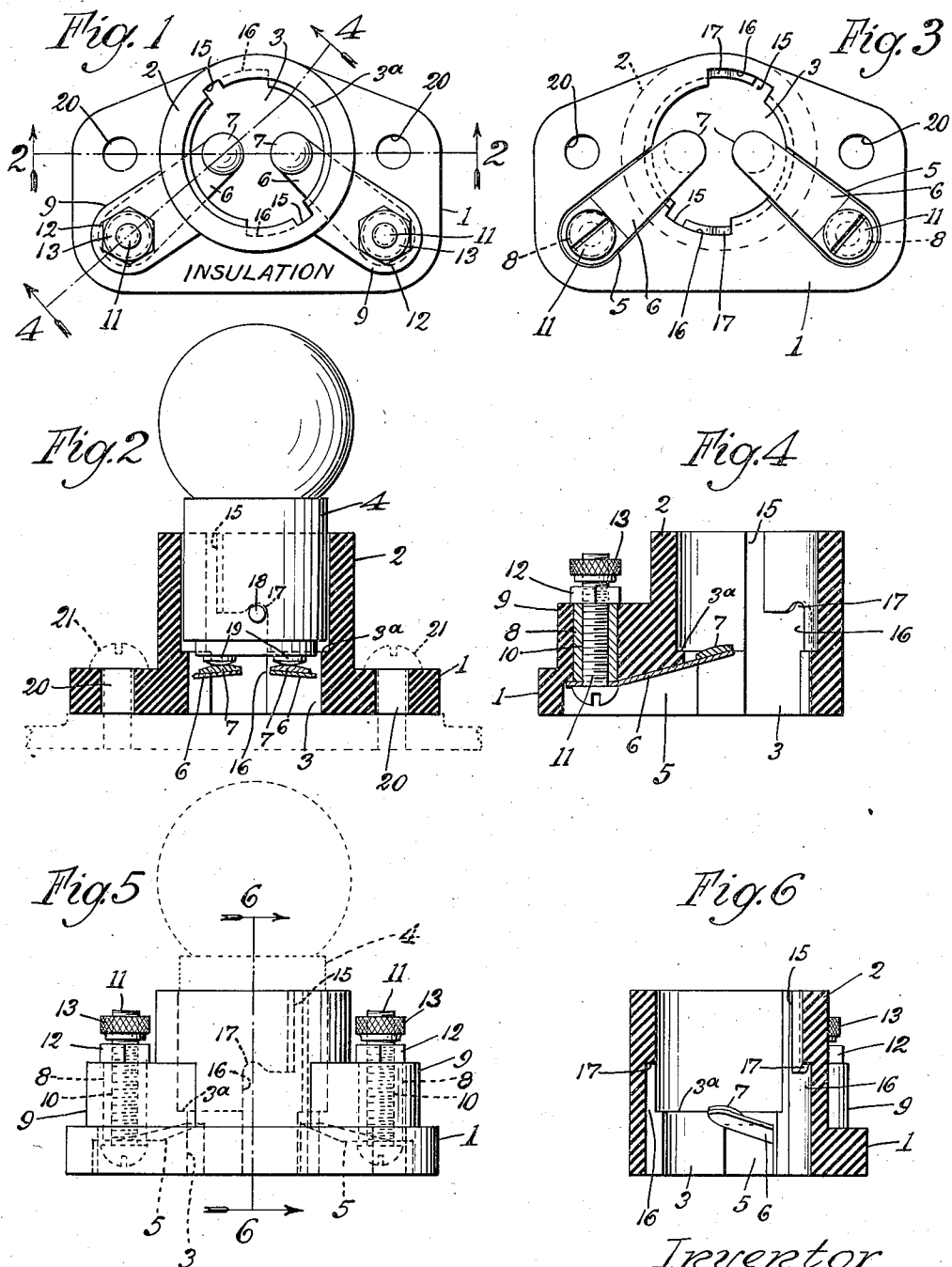
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ELECTRIC BULB SOCKET

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ELECTRIC BULB SOCKET

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1 Claim. (Cl. 173-328)

My invention relates to sockets for electric bulbs and is particularly adapted for employment in positions where the bulb and socket are subjected to vibration. It may be employed, for example, as a lighting means for vacuum cleaners of the type in which a small light bulb is employed. Other purposes are, however, obvious, including automatic uses.

One of the purposes of my invention is the provision of a compact, strong, easily manufactured and efficient socket, arranged to safeguard the contacts.

Another object is the provision of such a socket in which the contacts are themselves employed for preventing unintended displacement of the bulb during use.

Other objects will appear from time to time in the course of the specification and claim.

I illustrate my invention more or less diagrammatically in the accompanying drawing in which:

Figure 1 is a plan view;

Figure 2 is a section on the line 2-2 of Figure 1, illustrating an electric bulb in position;

Figure 3 is a bottom view;

Figure 4 is a section on the line 4-4 of Figure 1;

Figure 5 is a side elevation; and

Figure 6 is a section on the line 6-6 of Figure 5.

Like parts are indicated by like symbols throughout the specification and drawing.

Referring to the drawing, 1 generally indicates a base portion or support with which may be formed, preferably integrally, a generally cylindrical socket 2, the support having an open bottom 3 conforming to the bore of the cylindrical socket but of slightly smaller diameter to provide ledges 3a against which the lower edge of the bulb 4 abuts when the bulb is thrust a sufficient distance into the socket portion 2, serving thus as a limiting stop for the bulb to prevent excessive movement inwardly and to prevent distortion of the contacts. The base 1 and socket 2 are made of any suitable insulating material, such as "bakelite", hard rubber, etc.

The base 1 is provided with a plurality of bottom channels 5 in which may be positioned spring contact fingers 6, each of said contacts terminating in a rounded outer end 7, in the form of an upwardly convex part. Associated with each such finger is a screw threaded conductive sleeve 8 of metal which may be set into the upper extensions 9 of the base portion 1. It will be understood that the entire socket structure may be integrally formed of one piece of fiber or plastic

material and that the conductive members 8 are fitted or placed therein, either in the course of formation of the socket or thereafter. They may be internally screw threaded as at 10 in order to receive the screws 11 which serve to hold the fingers 6 in position and which also serve as exterior contacts. Nuts 12 may be positioned on the screws 11 or they may be omitted and the screws 11 may be so short that they do not occupy the full interior of the screw threaded member 8, leaving space for a screw to be inserted from above to be attached to or to carry a conductor or for any other purpose. If the screw 11 extends beyond the base as shown in Figures 1, 4, 5 and 6, a knurled nut 13 may be mounted on it to secure the conductors.

I illustrate oppositely positioned vertical grooves 15 on the inner face of the cylindrical member 2, which grooves communicate at their lower ends with extensions 16 having upper notches 17 which, in connection with the projections 18 from the bulb 4 constitute bayonet locks. It will be understood that the spring contact fingers 6 normally thrust upwardly against opposed contacts 19 in the bottom of the bulb, providing actuating contacts for the bulb itself. The spring fingers perform the additional function of holding the projections 18 seated in the notches 17 whereby rotation of the bulb into releasing position can result only if the operator presses downwardly on the bulb and then positively rotates it. Unintended rotation and release is made impossible and the bulb is firmly seated.

The base is apertured as at 20 to receive any suitable securing screws 21 diagrammatically illustrated in dotted lines in Figure 2, whereby the socket as a whole may be positioned on the vacuum cleaner or other mechanism or support with which it is used.

It will be realized that, whereas I have described and illustrated a practical and operative device, nevertheless many changes may be made in the size, shape, number and disposition of parts without departing from the spirit of my invention. I therefore wish my description and drawing to be taken as in a broad sense illustrative or diagrammatic rather than as limiting me to the precise showing of the drawing and description.

The use and operation of my invention are as follows:

When the socket is completed, the spring contact fingers 6 are positioned within the grooves or depressions 5 and are secured therein by screws 11, which may be longer or shorter, or by some other means. The shape of the depressions 5

within the spring contact fingers 6 lie is such that they position and retain the fingers, preventing their twisting or swinging about their point of attachment, thus preventing their being bent away out of proper contact position. For some purposes long screws 11 will be used as shown; for other purposes they will be short and the contact will be made by threaded members inserted from the opposite direction.

With the contact fingers and suitable attachments in position, the socket is placed wherever it is to be used, on a vacuum cleaner, in the head lamp of an automobile, or any other stationary or moving piece of apparatus. Suitable contacts are made with necessary conductors which in some manner or other engage the sleeves 8. The bulb is now inserted. It is inserted in the hollow of the socket, the guiding pins 18 of the bulb being positioned within the grooves 15. The bulb is normally positioned so that the inner end of its base contacts the shoulders or ledges 3a. These serve as a positive and unyielding stop and so prevent excess inward movement of the bulb. In devices of this general type, it has been customary in the past to have contact fingers serve the added purpose of limiting stops for the inward movement of the bulb and frequently the bulb is pushed in too far and having no positive stop, distorts the contact spring fingers and renders them inaccurate or useless, sometimes pushing them entirely and permanently out of the way.

It is the purpose to avoid this in the present construction by the provision of the ledges which constitute a positive mechanical stop so that the bulb is not only properly stopped or limited, but the spring contact fingers are positively protected against excess inward movement of the bulb and consequently excess bending of the springs.

When the bulb has been pushed into its limit, it is turned in the necessary direction to bring the pins 18 into the depressions 17. It is then released and the spring contact fingers force it upward to seat the pins 18 in the notches 17. The turning movement of the bulb cannot distort or displace the spring fingers because they are held against turning movement by the walls of the grooves or channels 5 in which they lie.

The upward inclination, as shown in Figure 4, which, whatever the position of the socket is an inclination in the direction of the lamp base, increases the pressure of the springs against the

lamp contact, giving the correct tension. This is one of the purposes of the inclination.

The arrangements just described, particularly the positive limit for inward movement of the lamp, and the arrangement of the grooves or channels which contain the spring fingers, is applicable to any type of socket. It is not limited to a socket with two contacts or to one of any particular size. The socket shown with the two contacts is to be considered, therefore, as illustrative and diagrammatic rather than as limiting.

Another advantage of this construction is in its ease of manufacture. The construction comprising the groove 15, extension 16, and notch 17 having an open bottom can be made by cutting or molding, simply, whereas the conventional closed-bottom bayonet lock groove cannot, and it is one of the objects of the invention to provide a construction which may be easily and cheaply manufactured.

I claim:

A socket for electric light bulbs including a support provided with a central aperture, a hollow cylindrical wall upstanding from the support and surrounding the aperture therein and defining a lamp base receiving socket, the inner surface of the socket and support aperture being provided with a continuous, longitudinal, open-ended groove adapted to receive a lug on a lamp base, rib members on the support extending radially of said socket, the under side of said support being recessed in line with said ribs, said recesses opening into the aperture of the support, a resilient contact in each of said recesses, each of said contacts having a free end terminating within said support aperture, an upwardly facing annular shoulder within the socket intermediate the ends of said longitudinal groove and adapted to limit inward movement of a lamp base placed in the socket, exposed terminal members penetrating the rib members and securing the contact members within the recesses with their free extremities above said annular shoulder for engagement with cooperating contact members carried by a lamp base, and a downwardly facing stop shoulder within said longitudinal groove, positioned to be engaged by said lug on the lamp base to limit upward movement of the lamp under the influence of said spring contact members.

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